a reference frequency generator for generating a reference frequency;

a reference frequency divider for frequency dividing said reference frequency;

a stereo modulation circuit for frequency modulating a right audio signal and a left audio signal by using one output of said reference frequency divider to supply resultant stereo modulated signals as FM signals;

an oscillator circuit for generating carrier waves to transmit said FM signals received from said stereo modulation circuit;

a program counter for frequency dividing said carrier waves into variable frequency components; and

a PLL frequency synthesizer which has a phase comparator circuit for comparing said variable frequency components output from said program counter with another output of said reference frequency divider to provide at an output end of said PLL frequency synthesizer a control signal for controlling said oscillator circuit.

2. (Amended) The FM transmitter according to claim 1, wherein frequency division ratios of said program counter and modulation level of said stereo modulation circuit are externally controllable.

3. (Amended) The FM transmitter according to claim 1, wherein said reference frequency from said reference frequency generator is selected from the group consisting of 7.6 MHz, an integral multiple of 7.6 MHz, and integer fractions of 7.6 MHz.

Please add new claims 4-20 as follows:

4. (New) The FM transmitter according to claim 1, wherein said reference frequency generator, said reference frequency divider, said stereo modulation

circuit, said oscillator circuit, said program counter, and said PLL frequency synthesizer are included in a single integrated semiconductor circuit.

5. The FM transmitter according to claim 4, wherein said single integrated semiconductor circuit is a BiCMOS circuit.

6. (New) The FM transmitter according to claim 1, wherein said reference frequency generator is a single quartz oscillator.

7. (New) The FM transmitter according to claim 1, further comprising:

a left audio circuit coupled to said stereo modulation circuit for outputting said left audio signal based on a left audio input signal; and

a right audio circuit coupled to said stereo modulation circuit for outputting said right audio signal based on a right audio input signal.

8. (New) The FM transmitter according to claim 7, wherein said left audio circuit and said right audio circuit include a volume circuit, a pre-emphasis circuit, a limiter, and a low-pass filter.

9. (New) The FM transmitter according to claim 1, wherein an external mute signal is applied to said stereo modulation circuit for cutting off said resultant stereo modulated signals.

10. (New) The FM transmitter according to claim 1, wherein said reference frequency divider comprises a T-shape flip-flop CMOS logic circuit.

11. (New) The FM transmitter according to claim 1, wherein said output of said reference frequency divider and said another output of said reference frequency divider are selected from the group consisting of 100 kHz, 50 kHz, 25 kHz, 10 kHz, 9 kHz, 5 kHz, and 1 kHz.

12. (New) The FM transmitter according to claim 1, further comprising at least one RF amplifier for amplifying said FM signals before transmission.

13. (New) The FM transmitter according to claim 1, wherein said stereo modulation circuit is a bipolar circuit.

14. (New) The FM transmitter according to claim 1, wherein said PLL frequency synthesizer is a CMOS circuit.

as cont.

15. (New) The FM transmitter according to claim 1, wherein said stereo modulator circuit comprises:

a multiplexer;

a stereo modulation level adjust circuit coupled to said multiplexer;

a variable capacitor coupled between said multiplexer and said stereo modulation level adjust circuit; and

an FM modulation level adjust circuit coupled to said stereo modulation level adjust circuit.

16. (New) A frequency modulating (FM) transmitter, comprising:

a reference frequency generator for generating a reference frequency;

a reference frequency divider for frequency dividing said reference frequency;

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a stereo modulation circuit for frequency modulating audio signals by using one output of said reference frequency divider to supply resultant stereo modulated signals as FM signals;

an oscillator circuit for generating carrier waves to transmit said FM signals;

a program counter for frequency dividing said carrier waves into variable frequency components; and

a PLL frequency synthesizer which has a phase comparator circuit for comparing said variable frequency components output from said program counter with another output of said reference frequency divider.

17. (New) The FM transmitter according to claim 16, wherein frequency division ratios of said program counter and modulation level of said stereo modulation circuit are externally controllable.

18. (New) The FM transmitter according to claim 16, wherein said reference frequency from said reference frequency generator is selected from the group consisting of 7.6 MHz, an integral multiple of 7.6 MHz, and integer fractions of 7.6 MHz.

19. (New) The FM transmitter according to claim 16, wherein said reference frequency generator, said reference frequency divider, said stereo modulation circuit, said oscillator circuit, said program counter, and said PLL frequency synthesizer are included in a single integrated semiconductor circuit.

20. (New) A method of generating an FM signal, comprising:

generating a reference frequency;

dividing said reference frequency using a reference frequency divider;

frequency modulating a right audio signal and a left audio signal using one output of said reference frequency divider to supply FM signals;

generating carrier waves to transmit said FM signals using an oscillator circuit;

dividing said carrier waves into variable frequency components; and

comparing said variable frequency components with another output of said reference frequency divider using a phase comparator circuit in a PLL frequency synthesizer.